Institutional barriers impeding through life value in Belgian public DBFM(O) projects.

Mrs. Nele Boussemaere TU Delft NL, KULeuven BE

1. Introduction

The myriad pressure of drivers as globalisation, international project teams, international client systems, demand for greater efficiencies is, in part, bringing about a shift towards through-life value. As the traditional organising method of design, bid, build, with a focus on price and competition offer little incentive for trust and cooperation to emerge (Cheung et al., 2003), this method is proven to be unsuitable to deliver this through-life value in construction projects. Implementing integrated through-life value teams, establishing relationships in which all project actors collaborate to connect business need, design, production, handover and use of a new facility, are increasingly encouraged worldwide. This trend is apparent in countries like the UK (Naoum, 2003), Japan (Chan et al., 2006) and Sweden (Eriksson et al., 2008, 2009) where researchers reported on measureable successes.

The move to integrated project teams being witnessed elsewhere is not taking place on the same scale in Belgium. Relative to other countries Belgium is not going down this 'through life value' path. Therefore the espoused benefits of integrated, collaborative working are not being experienced. Although there is clear evidence of growing dissatisfaction and inefficiencies in outcomes in the Belgian construction industry, construction participants as well in public and private sectors do not seem to put effort in looking for alternatives.

Without this move towards proper integration of design, construction , financing, maintenance and operation functions (DBFM(O)), requiring a move to fully integrated project teams (IPTs), early supply team involvement (werken in 'bouwteam'), continuous improvement of processes, joint commitment and sharing of risks, responsibilities and profits, best through-life value will never be achieved. Adversarial relationships and disputes will continue to dominate the industry. No mutual trust and commitment will get established.

Building long term relationships with clients will become the norm, with a change of focus towards value adding on a through-life cycle basis (Oostra, 2009).

Although DBFM(O) teams seem to be a suitable alternative to traditional procurement in public construction projects, to achieve through-life value, its low level of adoption in Belgium should be questioned. Why are integrated project teams (IPTs) not generally prevalent?

2. Barriers

Based on several other researches, Eriksson et al. (2008, 2009) detected three types of barriers preventing the adoption of through life value in the construction industry. They are categorised in cultural barriers, organisational barriers and institutional or industrial barriers.

Cultural aspects regarding people and their attitudes, like conservatism, inflexibility, low commitment, mistrust often constitute a vital barrier to change (Ng et al., 2002), as well as the adversarial culture in the construction sector (Bresnen and Marshall, 2000) with parties trying to achieve individual objectives, rather than working together towards mutual objectives.

The second group of barriers involve organisational aspects. The traditional organisation of construction projects in which distinct packages are allocated individually to different specialists together with the public client's competitive tendering habits, hampers the integration of work tasks and actors (Briscoe et al., 2004). These factors are even strengthened through legislation (see next paragraph). Ng et al. (2002) report that relationships become strained if actors have low confidence in each others' competences. Every party involved need to develop new competences to participate in integrated projects (Eriksson et al., 2008). Exchanging competences among participants in collaborative relationships can be achieved through early contractor procurement, forward integration in the supply chain.

Competitive pressures, and government regulations are examples of the third group, the institutional or industrial barriers that are derived from the organisation's industrial environment, potentially serving as serious barriers to change in general (Eriksson et al. 2008, 2009). Through establishing legislation, the cultural and organisational barriers are extra supported.

The following paragraphs will focus on the latter for public procurement. Which institutional barriers are impeding through-life value in public sector projects? Legislation influencing

public construction/procurement are examined to map the obstacles to overcome/to challenge, in order to implement future organising strategies in public construction projects to achieve through-life value.

2.1 Changing roles

First to achieve through-life value all construction participants have to understand/accept their new role in the integrated DBFM(O) team. Adapting to these new roles is hard, as change is often experienced as complicated, not ensuring better conditions afterwards. Together with obsolete legislation not being questioned, this first change is not evident.

2.1.1 Public initiator

The delivery of projects using conventional procurement normally involves the public sector contracting with the private sector to construct an asset, with the public sector providing the design and the financing itself. The public initiator is then responsible for operating the asset once it is built and can outsource the operational services to the private sector under separate contracts.

In integrated projects the public initiator gets the opportunity to go back to their core business being an organiser and regulator. Providing the project brief to the market with tight specification of the output requirements for the project detailing them for an extended period of time, from availability to handback (Hayen and Immers, 2009).

A shift from public financing in traditional procurement to private financing-public funding in integrated public-private partnerships (PPP) helps the government to make quick and cheap, ESA-neutral investments. Unfortunately in Belgium this is too often the only incentive for using integrated DBFM(O) teams in public construction projects. No instruments, like market scan, public-private comparator (PPC) or public sector comparator used in the Netherlands, testing the added value for money using PPP and accordingly DBFM(O), are implemented in the project procedure. The private sector with their skills and competencies are not involved as decisive factor in the choice between traditional or integrated (Hayen and Immers, 2009).

2.1.2 Contractor

In traditional public procurement private contractors have been long involved in providing the construction of buildings, while in integrated DBFM(O) projects the private sector is charged with, not only the building, but a flow of infrastructure services for a long period of time (Grimsey and Lewis, 2007). Numerous sources also suggest that moving from product delivery to the provision of integrated bundles of products and services, called servitization, requires a significant transformation in the way that firms are organized (Galbraith, 2002). Different skills, knowledge and people are needed. A move from price supplier to quality supplier is vital. The contractor will have to integrate both forward and backward in the construction process, adding his knowledge, skills and experience in all phases. The contractor gets the lead in public DBFM(O) projects.

2.1.3 Consultant

For many years now the Belgian architect has been, become the professional in charge in construction projects as a result of the title and profession protection and accordingly the creation of a monopoly status for architects in the Belgian market (Architect Act, 1939). Meaning that every initiator of a building activity requiring a building permission has to involve an architect, which result in this powerful position. Accordingly it is not a surprise that the study of Black et al. (2000) states that consultants are less convinced of the integrated thought and appear to feel that IPTs are simply a fad. According to the study they are less enthusiastic due to fears of loss of control. A change in the architect's attitude will be paramount.

Trade unions or professional bodies mostly have a conservative and defensive culture that inhibits change and encourages maintenance of the status quo (Craft, 1991). Van der Auwera (2010) aligns this to the conservative Chamber of Architects and their unwillingness to reform. Not only is the Architect act obsolete so is the Chamber of Architects, while they could be in perfect position to stimulate innovation in building organisation by supporting their architect members.

2.2 Changing procurement procedures

Secondly the best suited procurement procedure to select the integrated project team is searched for.

Where in the past only traditional procurement procedures, and more specific open or restricted bidding and offerte-aanvraag/appel d'offres (extra procurement procedure used only in Belgium) were used by the Belgian public initiator to award contracts, today the EU directives 2004/18/EC and 2004/17/EC stimulate the member states to use the competitive dialogue or the negotiated procedure to find skilled teams for complex and/or exceptional projects, where the nature of the works, supplies, or services or the risks and considerable uncertainties attaching thereto do not permit prior overall pricing (art 30 1b). These directives are transferred into the new Belgian public procurement law of 2006, fully operational since July 2013 (PPL2006).

Since public procurement cannot be grounded on trust-based negotiations and prior work experience, these laws are often seen as working against collaborative relationships (Ng et al., 2002; Naoum, 2003).

2.2.1 Negotiated procedure

Although the EU gives priority to the use of competitive dialogue for complex contracts (art.29), all DBFM(O) projects in Belgium are procured using the negotiated procedure.

In this negotiated procedure after bidding, the selected participants are invited to debate, which results in a best and final offer. After weighing the BAFOs the contract can be awarded to the most economically advantageous tender. Unfortunately price again represents at least 60% of the selection criteria, the other 40% often embodies timing and materials used, both price-driven and not the soft parameters like resources and competencies, reputation, collaborative ability, earlier experience of the supplier and shared values, Kadefors et al. (2007) suggested to use. As mentioned before, Cheung (2003) stated that a focus on price and competition offer little incentive for trust and cooperation to emerge , this procedure is proven to be unsuitable to deliver through-life value in construction projects.

Further the negotiated procedure also impedes early supply team involvement since the bidding comes before the debate. The potential for innovation a DBFM(O) team could bring is already tied down as the brief of the project is clearly defined for the tender documents.

2.2.2 Competitive dialogue

The new Belgian public procurement legislation of 2006 (PPL2006) together with the royal decrees of 2011 provide, through competitive dialogue, possibilities for limited invitation to a few trusted bidders, increasing the chances of lasting relationships in which actors can establish shared values and win-win attitudes, in addition to the short term perspective of the open bid procedures (Eriksson et al., 2008). In this procedure the early involvement of all construction participants, with their skills, knowledge and experience in the debate before bidding could guarantee achieving through life value.

Unfortunately although the procedure is ready for use, it is up till today nowhere adopted in Belgium. Due to the earlier, but still recent opportunity in the Belgian public procurement law to apply the negotiated procedure, this procedure is now becoming embedded. Resulting again in a fear of change and lacking knowledge and experience impeding the implementation of the competitive dialogue.

2.3 Changing contracts

Thirdly an adapted contract to be able to deliver through-life value is crucial.

Although Barlow et al. (1997) accuse the deep-rooted practice of using standard contracts of preventing the adoption IPTs since it brings a formality that stifles good relationships, in the Netherlands the Directorate-general for public works and water management (Rijkswaterstaat RWS) and the Government buildings agency (Rijksgebouwendienst RGD) publishes, uses and frequently updates (e.g. after finishing a DBFM(O) project successfully) a standard model agreement which is state wide in use. Today even more and more local authorities are convinced as well to use this model agreement.

In a contract people are looking for dividing joint commitment, risks and responsibilities, good communication, transparency and trust. Knowing that system-based trust is ranked as

the most important trust factor among clients and consultants, this indicates that they rely strongly on satisfactory contract terms to enhance trust (Wong et al., 2004). At the same time according to Lazar (2000) these contracts increase opportunism, since standard contracts are too rigid and do not emphasize collaboration and sharing of responsibilities and risks. Instead, they focus on the individual parties and dividing their responsibilities, thereby driving a distance between them which is negative for dispute resolution.

Egan stated (1998) that formal, rigid, contractual relations need to be replaced by an integrated supply chain system which improves productivity and profits.

Although we are not restricted by the use of standard contracts in Belgium as the authors above mention, the benefits RWS and RGD in the Netherlands experience are worthwhile to study since their standard documents are a translation of all knowledge and experience gathered in many successful projects.

2.3.1 DBFM(O) contract

In general in DBFM(O) projects an integrated contract is signed between the public initiator and the private consortium (often a special purpose vehicle SPV). All participants in the consortium are jointly and severally liable for the project outcome, that is why the separate packages in the DBFM(O) contract are subsequently back-to-back contracted to the different consultants and sub-contractors in the SPV in order to divide risks and responsibilities.

In this context the Architect's act of 1939 is involved again. The protection of the architect's profession established in the act aimed at protecting the public interest (Van Gulijk, 2010). Meaning that in every construction project an architect is involved and subsequently a design contract is signed (here back-to-back), a liable professional is in charge.

The architect protects the public interest through the value of his design and through inspecting the execution by the contractor on site, the main tasks of the architect according to article 4 Architect's act (Uytterhoeven, 2010). Having the obligation to control the contractor and concurrently sharing in an SPV together with the contractor or being subcontracted as a consultant by the SPV allude to a potential conflict of interest. Therefore the Architect's act included a prohibition of collaborative working between architect and contractor in article 6,

which obliges the architect, as an adviser and representative of the client, to preserve at all times his incompatible relationship with the contractor.

Through this act it is clear that the architect and the contractor can never fully collaborate in an SPV and share pains and gains as is aimed for by implementing integrated project teams. The SPV managed by the contractor cannot subcontract the design to the architect. A direct agreement between public initiator and architect is a possible solution, which floors one of the basics of integrated project teams.

Further in a more recent act, Act Laruelle (2006) some prominent additions were made to the Architect's act. The act offered architects from 2006 on the opportunity to practice their profession in a limited company, again without any involvement of incompatible professions allowed, i.e. the contractors. This limited company was also of importance concerning liability and insurances. While this new law obliges architects as well to insure their professional indemnity and ten year liability, what was only a deontological requirement for the registration at the Chamber of Architects before, their liability is now limited to what they have invested. Meanwhile the architect is still the only construction professional bound by law to insure his/her indemnity and liability. What could result in a deep pocket approach from other participants, when disputes arise, consequently the architect is often seen as the party who (read his insurance) can best bear the risks.

Sharing and insuring the risks in an integrated project team expects more involvement, investment from the client and the contractor, which surely is seen as a barrier.

3. Future challenges

This article is written as a part of a PhD study. The largest challenge today is collecting the empirical data necessary. Future challenges in this study is further examining the barriers mentioned above through comparing Belgian tender contracts from selected DBFM(O) cases with the standard contracts Rijkswaterstaat (RWS) en Rijksgebouwendienst (RGD) are using and adjusting/updating on a frequent basis in the Netherlands. Why is standard contracting not used in Belgium? How different is DBFM(O) implemented in Belgium?

4. Conclusions

To attain best through-life value, a move to fully integrated project teams (IPTs), early supply team involvement (werken in 'bouwteam'), continuous improvement of processes, joint commitment and sharing of risks, responsibilities and profits requires a change in roles of the participants, procurement procedures applied and contracts negotiated. These changes are influenced by three types of barriers impeding through-life value in public DBFM(O) projects. The cultural and organisational barriers are supported by the institutional barriers, like competitive pressures and government regulations, confirmed by Phua (2006) having the largest influence on forming integrated DBFM(O) teams.

First to achieve through-life value all construction participants have to understand/accept their new role in the integrated DBFM(O) team. Secondly the best suited procurement procedure to select the integrated project team is searched for and found, the competitive dialogue. In this procedure the early involvement of all construction participants, with their skills, knowledge and experience in the debate before bidding could guarantee achieving through-life value. Stimulating the public initiators to implement this procedure through success stories abroad is urgent. And thirdly an adapted contract to be able to deliver through-life value is crucial. With the constraint/barrier of the Architect's act, is it possible to enhance collaboration in the future, to achieve fully integrated project teams?

To end, the vision of Post and Altman (1994), to see opportunities in certain barriers, is worth investigating.

References

Barlow J. and Cohen M. (1997) *Towards positive partnering: revealing the realities for the construction industry.* The policy press Bristol

Black C., Akintoye A. and Fitzgerald E. (2000) *An analysis of success factors and benefits of partnering in construction.* International journal of project management 18, 423-434

Bresnen M. and Marshall N. (2000) *Partnering in construction: a critical review of issues, problems and dilemmas.* Construction management and economics 18, 229-237

Briscoe G., Dainty A., Millett S. and Neale R. (2004) *Client-led strategies for construction supply chain improvement.* Construction Management and Economics 22, 2, 193-201

Chan A.P.C. et al. (2006) *Partnering for construction excellence: a reality or myth?* Building and environment 41, 1924-1933

Cheung S.O., Ng T. and Wong P.S.P. (2003) *Behavioural aspects in construction partnering.* International journal of project management 21, 5, 333-343

Craft, J. (1991) *Unions, bureaucracy, and change: old dogs learn new tricks very slowly*. Journal of Labor Research 12, 4, 393-405

Egan J. (1998) *Rethinking construction.* Available at: http://www.constructingexcellence.org.uk/pdf/rethinking%20construction/rethinking_construction_report.pdf (Accessed: 2013, September 1)

Eriksson P.E., Nilsson T. and Atkin B. (2008) *Client perceptions to barriers of partnering.* Engineering, construction and architectural management 15, 6, 527-539

Eriksson P.E., Atkin B. and Nilsson T. (2009) *Overcoming barriers to partnering through cooperative procurement procedures.* Engineering, construction and architectural management 16, 6, 598-611

Galbraith, J.R. (2002) *Organizing to deliver solutions.* Organizational Dynamics 31 (2) 194-207

Grimsey D. And Lewis M.K. (2005) Are public private partnerships value for money? Evaluating alternative approaches and comparing academic and practitioner views. Accounting forum 29: 345-378

Hayen S. and Immers B. (2009) *Geïtegreerde contractvormen in België en Nederland: gaat de bouw op de schop?* Proceedings BWV wegencongres

Kadefors A., Björlingson E. and Karlsson A. (2007) *Procuring service innovations: contractor selection for partnering projects.* International journal of project management 25, 375-385

Lazar F. (2000) *Project partnering: improving the likelihood of win/win outcomes.* Journal of Management in Engineering ASCE 16, 2, 71-83

Murdoch, J. and Hughes W. (2008) *Construction contracts: law and management.* 4th ed. Taylor and Francis London

Naoum S. (2003) *An overview into the concept of partnering.* International journal of project management 21, 71-76

Ng T., Rose T., Mak M. and Chen S.E. (2002) *Problematic issues associated with project partnering – the contractor perspective.* International journal of project management 20, 6, 437-449

Oostra M.A.R. (2009) *Renewed and new emerging roles in construction.* Proceedings Changing Roles; new roles, new challenges.

Phua F. (2006) *When is construction partnering likely to happen? An empirical examination of the role of institutional norms.* Construction management and economics 24, 615-624

Post J. and Altman B. (1994) *Managing the environmental change process: barriers and opportunities.* Journal of Organizational Change 7, 4, 64-81

Uytterhoeven, K. (2010) *Bouwstenen van het recht: vermogenrechtelijke grondslagen van bouwen en vastgoed.* 2nd Ed. Acco Leuven

Van der Auwera L. (2010) *Tijd dringt voor hervorming Orde.* Available at: http://www.architectura.be/nieuwsdetail_new.asp?id_tekst=1582&content=Jaaroverzicht%202010%20-%20Naar%20een%20splitsing%20van%20de%20orde? (Accessed: 2013, September 1)

Van Gulijk S. (2009) *European architect law: towards a new design.* Maklu Apeldoorn

Wong P.S.P. and Cheung S.O. (2004) *Trust in construction partnering: views from parties of the partnering dance.* International journal of project management 22, 437-446

Architect act (1939) Available at: http://www.ejustice.just.fgov.be/cgi_loi/loi_a.pl?language=nl&caller=list&cn=1939022030&la=n&fromtab=wet&sql=dt='wet'&tri=dd+as+rank&rech=1&numero=1 http://www.architect.be/wetgeving-betreffende-de-uitoefening-van-het-beroep (Accessed: 2013, September 28)

Public procurement legislation (2006) Available at:
http://16procurement.be/sites/default/files/pdf/Loi%20Wet%202006%20coord.pdf
(Accessed: 2013, September 1)

European public procurement law 2004/18/EC Available at:
http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32004L0018:en:NOT
(Accessed: 2013, September 13)

Act Laruelle (2006) Available at:
http://protect.be/_CLIENTS/Protect/Documenten/2007-2-5-(105218)_wet%20Laruelle.pdf
(Accessed: 2013, September 28)